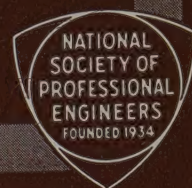




the ILLINOIS ENGINEER



Kal Klammer and daughter, Karen, hand out literature at ISPE Booth during Diamond Jubilee Exposition in Springfield, May 4-8, 1960.

THE ILLINOIS ENGINEER

JUNE, 1960

VOLUME XXXVI, NO. 6



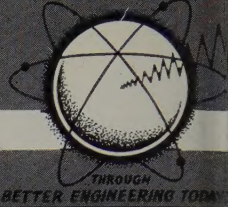


THE ILLINOIS ENGINEER

ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS, Incorporated

Affiliated with the National Society of Professional Engineers

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The ILLINOIS ENGINEER is published monthly by the Illinois Society of Professional Engineers, Inc., at 714 Myers Building, Springfield, Illinois.

The Illinois Society of Professional Engineers is not responsible for statements made or opinions expressed in this publication.

Second-Class postage paid at Springfield, Illinois.

Subscription rates are \$2.00 per year in advance to members of the Illinois Society of Professional Engineers; \$4.00 per year in advance to non-members in U.S.A. and its possessions, Canada, and Mexico. Foreign \$6.00. Single copies 40c. Special issues \$1.00.

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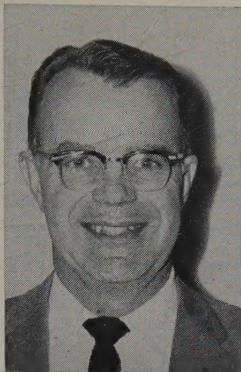
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PRESIDENT'S MESSAGE

Engineer management relations have been cemented by the results of the May, 1960, vote of Western Electric engineers in plants over the nation. The election returns announced by the NLRB showed a total of 3,970 to 2,603 against union representation by the Council of Western Electric Professional Employees-National, affiliated with the Engineers and Scientists of America. Once again, it can be seen that the engineers prefer the professional manner of handling employer-employee affairs.



L. D. Hudson

ISPE-NSPE Concepts Proven Sound

The appeal of professional concepts to engineers in industry is not a matter of chance. ISPE-NSPE policies on Employment Practices have been carefully defined. These are at the fingertip of each engineer in the 1959 NSPE booklet, entitled, "Policies, Professional and Administrative." With this background, NSPE, using its local framework, held meetings in eight major areas with Western Electric engineers. It also prepared an open letter to all of these engineers, stating the NSPE views. Western Electric distributed these to its men. Our own ISPE National Directors were active in developing this contact; so, Illinois can be proud of its part.

A Door To Understanding

In effect, the vote of the Western Electric engineers is an expression of confidence in their professional ability to meet with management on common ground. This same confidence, however, was generated by the expressed interest of management in its engineers. The distribution of the NSPE letter by the Company was evidence of this. This management interest in itself is a door to understanding. It is one of the fundamentals that will help to build a true professional relationship among the engineers. It can be used to project engineering thinking beyond technology into the commercial and social areas. Once this broad base is established, the professional concepts appear.

Registration Brings Stature

Industries and large engineering organizations the country over are finding that encouraging their men to become registered as professional engineers is a stature-building policy. The young engineer's vision vastly expands once he has passed his Engineer-In-Training phase of the professional engineering examination. Once

the engineer becomes registered, he is in a position to best evaluate his work, assess his ability, and develop his own professional perspective. Vision of this kind provides the independent free thinking essential to imaginative development and enthusiastic production.

A year ago, the work ahead was not so vividly in focus to me as it is today. Since that time, I have had the privilege of working closely with you on the Board. I also have had the privilege of attending the NSPE State Presidents Conference held at Lafayette, Indiana, in April. These experiences, combined with the events of the day, show that our order of business is sound. They also reveal however that certain areas can well be stressed.

1. We will of course drive for the early re-establishment of the Executive Director activities. Larry Goddard has accepted a position with the Associated General Contractors of Illinois and will not be available to us after June 1, 1960.

2. We will be following with pleasure the mandates of the membership to make funds available for committee activities, publications, and for the other activities stressed in the Long Range Budget Study. It will be a pleasure to prepare for this.

3. We must all improve our perspective of the professional engineer-union question in industry. We must all be ready to act swiftly when needed as NSPE has done on the Western Electric Case. An intelligent front on this will pace our acceptance in many industries as well as preserve our freedom to practice as professionals.

We have explored many facets of our professional development. We are maturing fast and our ability to expand requires that we build our communications to assure that the membership will be with us. The year ahead will be exciting and challenging.

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REPORT TO ISPE

By Wm. T. HOOPER*

*(Presented to the Diamond Jubilee Conference,
May 5, 1960) Springfield, Illinois.*

It has long been my contention that the reward gained by an individual in working for a civic organization or professional society is of much greater magnitude than any service which he may render to the organization or the profession. I have found this particularly true in the work I have done in the Illinois Society. There have been times when some of us have engendered considerable ill-feeling from other members because of our suggestions and recommendations. Some of the battles have been stormy but all of us have been doing that which we have felt was in the best interest of the Society, the Profession and the public.



William T. Hooper, Jr.

During the last two years, almost all of the suggestions which caused a near splitting of the Society a few years ago have been carried out. Those who made the proposals and were looked upon as wide-eyed radicals have been vindicated and in many cases have a very influential voice in the administration at present. The Society and the Profession have moved and are moving forward with increases in membership and a corresponding increase in influence and prestige. Care must be taken that membership is not increased at the sacrifice of Society integrity and that benefit to the Profession is not gained by disregarding the public good and the basic tenets of our democratic and capitalistic forms of government and sociological development. I think that these aims can be accomplished if we can maintain the basic philosophy of democratic professional practitioners.

I would like to make certain recommendations for the future activity of each of the committees with which I have worked for the past year.

Legislation

The committee this year will be carrying on its work preparatory to the next legislative session and it must formulate a modus operandi to handle matters affecting the profession as they arise and to initiate action where it is felt necessary and advisable for the public good. The Society will undoubtedly be accused of acting in its own selfish interests but it must also remember that in technical fields the public must often be protected from itself. The legislation which was attempted during the last legislative session indicated that there are vested interests which would prostitute the free endeavors of the professional man to their ends.

*ISPE Vice President of Professional Affairs for 1959-60.

Ethics and Practice

This committee might be looked upon as the obstetrician and pediatrician who is trying to guide the Society through its birth pangs and growing pains. The activity of the committee during the year past has shown that there is a genuine interest among the members in establishing interpretations of the ethical canons and operating principles of the Society. In the future, the committee must take precautions to prevent it from becoming the mediator between members who may be trying to take punitive action for personal reasons. It must also be careful that in its attempts to establish seemingly professional relations between our members and the public, it does not unduly penalize a member. In this connection, I am thinking particularly of the action taken by one of the chapter committees upon a complaint lodged against a member by a client regarding his fees. I do not think sufficient consideration was given to the member's position before he was censured. On the other hand, we must remember that we cannot gain the respect of the public until we discipline ourselves.

Fees and Salaries

This committee must take a realistic view of the economic situation of its members and remember that salaries cannot be improved to any great extent without improving the lot of the employer by being somewhat more realistic about recommended fees. Above all it must remember that its recommended schedules are minima rather than fixed maxima. I would further suggest that the I.S.P.E. committee work independently of the committees of other societies. We have a cross-section of membership which should provide a composite view of the whole problem.

Employment Practices

The work of this committee will probably best be carried on on a "play by ear" basis. It should be ready to undertake investigations of possible inroads by the unions as well as considering the working conditions of employee engineers.

Young Engineers

This committee can probably do its best work by working within the framework of our educational institutions in the encouragement of professional ideals in the student and the engineer-in-training.

Education

This committee has been quite active in the past in compiling statistics concerning the level of professional development of engineering faculties. This work should be continued and action be taken on the findings. I think the Society should take off its kid gloves and roll up its sleeves. Certainly no progress will be made toward the professional development of either teacher or student unless the desirability of such development is instilled in the administrative and teaching staffs of our engineering schools.

The Society as a whole must always keep before it the democratic ideals of our country. As long as scientists and engineers are allowed to work in an atmosphere of freedom of expression, I do not think we have to worry about our technological progress. There is unfortunately a strong tendency toward socialization of our technological talent with the attendant stultifying effect of bureaucratic thinking. I think the encouragement of intellectual honesty and professional responsibility in the engineering profession is more important than the suppression of creative thinking by public decree. The Society in the past, has pandered to bureaucratic control of its members' thinking in an effort to increase its membership and engender the supposed good will of public officials. It is time also that action be taken in this direction to educate the public to the inefficiency of government and the possible benefits to be gained by the imaginative designing of unsuppressed free enterprise. Jefferson said, "That government is best which governs least."

Developing Prestige

The Society must look to a future in which the individual member will bear the responsibilities of his professional position and work toward the best interests of the public and the Profession. It will be only as strong as the position of its individual members with relation to the clients whom they serve. Inasmuch as this is a capitalistic society in which we live and operate, the dignity of the individual is upheld to a great extent by the relation of his prestige to that of the entire society. This prestige is composed to some extent by the job a man holds and to a much greater extent by his ability to acquire those material things by which our society sets such store. Slowly, because he is responsible for the design and production of those things which have enhanced the standard of living of the public, the engineer's prestige has increased, but unfortunately his material gains have not kept pace with those of other professions. It is

up to the Society to continue to educate the public to the proper place held by the creative professional man.

In order to carry on the programs which will implement its goals, the Society must have finances and enthusiasm. The finances are necessary for the hiring of necessary individuals and services to conduct its business in such a way as to engender the requisite enthusiasm in its members. In the past, the Society's programs have been seriously hampered because there was not sufficient money to hire legal, public relations, and clerical help. The executive director has done an admirable job with the facilities available and his past performance should indicate to the membership the almost limitless possibilities for positive action if the administration were not hampered by lack of funds.

Improving Service To Committees

Until recently, practically the entire work of the Society was carried on by the voluntary efforts of the members. The Society was small, its programs were simple and communication was relatively easy. The number of committees has grown and the fields into which these committees have delved have become more numerous and widely scattered. The amount of time necessary to disseminate information to the committees has become so time consuming as to make it almost prohibitive time wise and financially for many members. It is quite important that the headquarters office be given the facilities to handle more correspondence and enable it to pass on policies and facts to the various committee chairmen and members.

The handling of committee reports must be simplified. It should not be necessary to publish them in the Illinois Engineer, in the proceedings for the annual meeting and then read them at the annual meeting. A ways and means committee probably should be appointed to make a continuing study of the physical conduct of the business in order that communication is kept simple and efficient.

Again let me express my gratitude for the opportunity to serve the Society according to my limited ability and express a regret that I do not have more time to devote to it.



Shown at Convention are, left to right: S. T. Anderson, W. L. Hooker and Colin E. Schroeder.

I.S.P.E. CELEBRATES DIAMOND JUBILEE

How America plans to put the world's first astronaut into orbit, 150 miles above the earth, traveling at 18,000 miles per hour and circling the earth every hour and a half, was graphically shown in the State Armory in Springfield from May 4 through May 8. The new Mercury Project Space Capsule, a vehicle six feet in diameter, nine feet tall and weighing over a ton, had its first general public viewing as part of the Diamond Jubilee Exposition sponsored by the Illinois Society of Professional Engineers.

The most complete showing of engineering displays ever assembled in the midwest was open free to the public during the Society's 75th year convention.

In addition to the Capsule, the Nike and other equipment employed in the conquest of space, exhibits included displays of atomic devices, new military weapons, modern telephone techniques, computers, and mechanical achievements; 75 years of progress in all engineering fields, ranging from sanitation, road building and bridge designs, plastics, illumination, metallurgy, agriculture—in fact, there were exhibits covering practically all phases of engineering accomplishment.

White House Speaker

While thousands of the public viewed the exposition, members of the ISPE met in annual convention in the St. Nicholas Hotel.

Principal speaker on the program was Robert E. Merriam, deputy assistant to President Eisenhower. He addressed the 75th Annual Banquet Friday evening, May 6. Mr. Merriam gave an interesting first hand account of "America's Defense Posture for the 1960's". He said that we must prepare ourselves to spend huge sums for research and development of space conquest projects to assure continued balance of power with Russia. He concluded that our status is excellent, however, we can never let down in our efforts to hold the respect and confidence of other nations.

Robert Ruthrauff, applied programming manager of International Business Machines, Chicago, was the speaker at the opening session of the convention on Thursday, May 5. He gave an enlightening discussion of the Future Uses of Computers in design. Frank Edwards of Chicago, a past president of the ISPE, presided at this meeting and the members were welcomed by Mayor Lester E. Collins of Springfield.

Paul Robbins, NSPE Executive Director, spoke to the Luncheon Meeting Friday, May 6. Robbins gave an inspirational message built around the topic, "Quo Vadis—Where Are You Going?" He stated that Engineers must first be proud enough of their profession to speak out to let others know about themselves. Until Engineers assume full responsibility as professional people, the public will not extend to them the status and recognition they rightfully deserve as a profession.

Following the luncheon, Donald S. Magowan of Elgin, past president of the ISPE, presided over the annual meeting addressed by Harold A. Mosher, Rochester, New York, president of the National Society of Professional Engineers. Mr. Mosher made predictions of things to come in his presentation of "America's Future and the Role of the Engineering Profession."

A Legislative Forum with speakers, Paul Gordon Jr., Attorney, and C. K. Willet, Engineer, and members of the Illinois Legislature, was well received and gave some interesting insight to possible legislation which will concern engineers during the next session of the Illinois General Assembly. George Farnsworth, Legislative Committee chairman, presided.

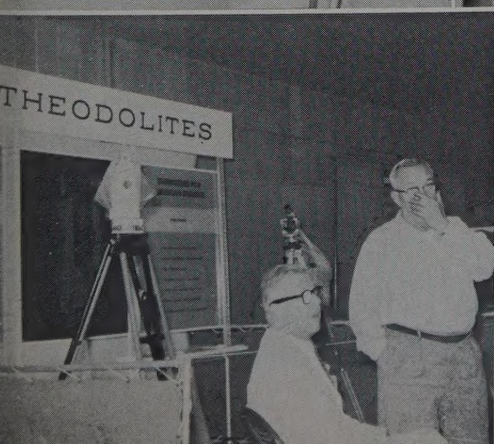
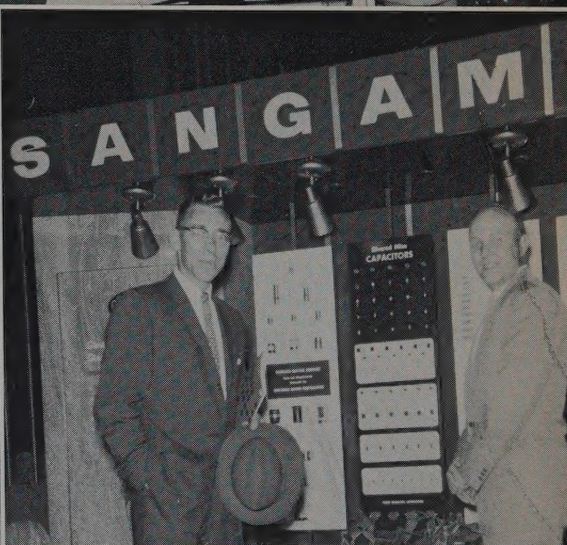
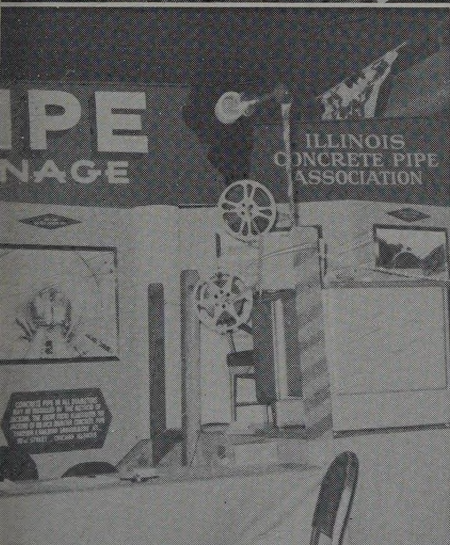
One of the highlights of the Convention was the presentation of the Illinois Award at the annual dinner Friday evening. Donald S. Magowan, outgoing president, was recipient of the coveted Award for Outstanding Contributions to the Engineering Profession. He was cited for his long service and for having the distinction of serving as President of three ISPE Chapters as well as ISPE Vice President and President.

The 1960 Diamond Jubilee Program will long be remembered as the most interesting milestone for Engineering Progress in Illinois. As a commemoration to the event, Governor William G. Stratton proclaimed May as Engineering Month in Illinois and joined citizens throughout the State in saluting the members of ISPE for the profession's numerous contributions to our modern way of Life.



Illinois State Water Survey engineers, who served as instructors at the unusual engineering short course on evaluating water wells and aquifers, conducted May 10-11 at the University of Illinois, were (left to right): Sandor Csallany; Robert R. Russell; William C. Walton, head of Ground-Water Research; Richard J. Schicht; William H. Walker; and Robert T. Sasman, head of the Water Survey's northwestern Illinois field office at Naperville. Sixty-seven engineers from five different states attended the short course, conducted by the Water Survey's Engineering Section in cooperation with the University's Engineering Extension Division.

Pictured at right are scenes of highlights of ISPE 75th Year Convention and Diamond Jubilee Exposition in Springfield, May 4-8, 1960.



WHAT IS AN ENGINEER?

By MICHAEL LEFKOW

Thick glasses, bags under the eyes from late studying, slight frame hunched over from the carrying of no less than six tomes, and a general hang-dog appearance make up the cartoonist's conception of the ever-present intellectual. Whenever I see this pitiful representation in a magazine, pulpy or otherwise, I recall the usual occupation connected with this poor soul: engineering. Is this the general way an engineer is thought of? Unfortunately, many people do not know what an engineer has to do and mistakenly accept this picture as true.

An **average** engineer, in order to be able to do a decent job, has to follow anywhere from **six to ten** years of hard study. Mathematics, chemistry, physics: these are just a few **basic** courses of study our engineer must struggle with all the way to the graduate level. He must be able to use and understand each one of these natural sciences not only theoretically, but prac-

a factory where table sirups are made from simple and obtainable potatoes or corn. Because of this practical side of our "engineer-intellectual," we could describe him as one who can accomplish with one dollar what any one of the untrained multitudes can do indifferently, with two.

When we see the massive span of the Golden Gate Bridge, do we think of the work of countless engineers that went into this delicate giant? No, we admire the beauty of line and form as the setting sun silhouettes this silent martyr. Not a groan, not a creak of defiance does the straining colossus of steel and concrete utter, but a willingness to serve man, and keep on serving without complaint for decades yet to come . . .

Do the makers of this magnificent masterpiece deserve the derision that the cartoonist inflicts upon them? When we look at men such as Goethals, Eiffel, Fleming, McAdam, and Steinmetz, do we attribute their efforts to this caricature of an engineer? These men are normal humans, except in dedication no dif-



Left to right: Mrs. Bernard Lefkow, Michael Lefkow, winner of Chicago Chapter Essay Contest on Engineering (What Is An Engineer?), L. D. Hudson, ISPE President, and Gerald Marks, Chicago Chapter President.

tically, too. The mathematician studies the relations between the sides and the angles of a triangle; the engineer uses the knowledge to measure the distance across a river or to the top of a distant peak. The physicist studies the laws of centrifugal force; the engineer **applies** these laws when he raises the outer rail at a curve, to prevent a train from disaster. The chemist discovers that starch can easily be changed into glucose; the engineer **than** designs **and** operates

ferent from the rest of us; who have made this world what we know it to be—a pulsing, striving and mechanized Hercules of stone and steel. We will continue to reap the benefits of an efficiency of two dollars for one, through the followers of these great figures.

In conclusion, we see that an engineer is as normal as any other human; only he makes it his **business** to apply the discoveries in nature to the betterment of his fellow man.

PHILLIPS PETROLEUM WINS INDUSTRIAL DEVELOPMENT AWARD

The Phillips Petroleum Company has been selected to receive the first annual NSPE Industrial Professional Development Award which will be presented at the annual meeting in Boston, June 8-11.

"Forward-Looking Engineering Employment Practices"

The five-member Industrial Award Committee selected Phillips because of its "outstanding advancement and improvement in the development and application of forward-looking engineering employment practices." The committee found that Phillips' engineering employment practices included a definite encouragement of such programs as registration, education and technical training, writing and publishing material, professional working conditions, correct use of engineering manpower, the proper application of engineering titles, and the improvement of engineer-management communications. Phillips, with headquarters in Bartlesville, Oklahoma, currently employs 2,060 graduate engineers.

Encourage Society Participation

In evaluating Phillips' engineering employment

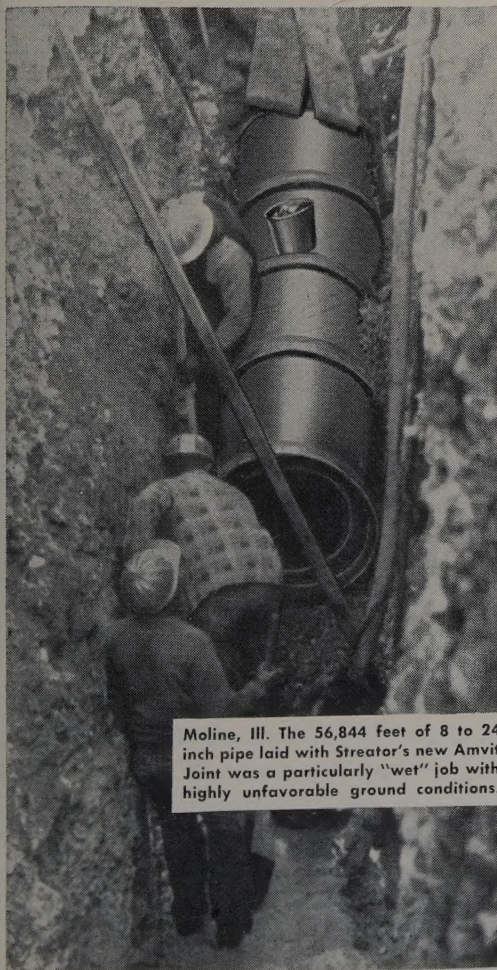
practices, the Award Committee found that the firm urged engineers to participate in technical courses offered by universities and colleges, held numerous technical information programs at company expense and on company time, assisted engineers in the publication of technical papers, and encouraged active membership in engineering societies.

Award to be Presented Annually

Phillips Petroleum was selected for the Award from nominations of industrial firms throughout the U.S. by local chapters. The award will be presented by the NSPE president each year at the annual meeting.

DOUGHERTY COMPILES ENGINEERING BOOKLET

Dr. N. W. Dougherty, dean of the University of Tennessee College of Engineering, has compiled a booklet, "Your Approach to Professionalism", for engineering students and professors. Dean Dougherty is chairman of a committee of the Engineers' Council for Professional Development, which published the booklet. He was honored in 1958 with the National Society of Professional Engineers' Engineer of the Year Award.



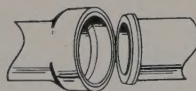
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- Engineers—** Reduce the size and cost of new disposal plants by specifying infiltration-proof sewers. Use only the pipe size required to carry actual sewage flow.
- Homeowners—** Enjoy long, trouble-free service even in root-infested areas. Your sewer line need never clog nor be replaced during your lifetime.

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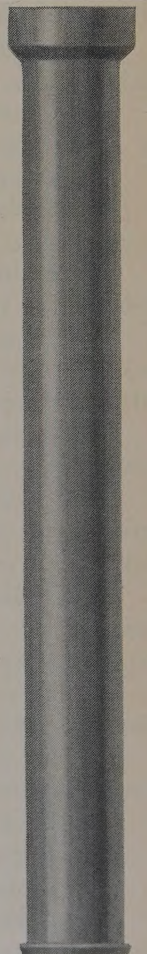
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FUNCTIONAL SECTION FOR BUILDING ENGINEERS CONSULTANTS

On Thursday, May 5, 1960, during the Functional Section program at the Annual Meeting of ISPE in Springfield, the following persons met to discuss the possibility of formulating a Functional Section named Functional Section for Building Engineering Consultants, Illinois Society of Professional Engineers.

Those present were:

Edward J. Long, Drach Bldg., Springfield, Illinois, Consultant.

Vincent G. Lauters, ROICC-PCUO, USNH—Great Lakes, USN.

E. O. Hull, 230 First Nat'l Bank Bldg., Peoria, Ill., Associated Engineers Inc.

Roy M. Conrad, 1011 Main St., Peoria, Ill., Beling Engr., Consultants.

Howard R. Verduin, 189 W. Madison, Chicago 2, Ill., Nachman, Vragel & Assoc., Consultants.

Robert I. Geyer, 39 So. LaSalle St., Chicago 3, Ill., Sika Chemical Corp.

Carlos Hidalgo, 311 Longview, Waukegan, Ill., Consulting Engineer.

Ralph J. Henneman, 1503 Maywood, Champaign, Ill., University of Ill.

J. Raymond Carroll, 104 W. University, Urbana, Ill., J. Raymond Carroll & Associates.

Earl H. Beling, 307-16th St., Moline, Ill., Beling Engr., Consultants.

A. C. Kessell, Armory Bldg., Springfield, Ill., Div. of Arch. & Engr.

The group decided the following:

1. It would be highly desirable to formulate such a Functional Section within the ISPE.

2. The name would temporarily be a "Functional Section for Building Engineering Consultants."

3. The membership should be open to those who are interested in mechanical, electrical and perhaps structural design work for buildings.

4. The purpose would be to discuss mutual problems of a professional nature rather than technical.

5. It was agreed that the major problems are managerial in nature but that the membership would **not** be restricted only to management personnel.

6. Mr. Earl Beling was elected temporary Chairman, and Mr. J. Raymond Carroll was elected temporary Secretary.

7. The next organizational meeting would be in Peoria in July or August.

8. The following items were noted as being of immediate interest and deserved study and discussion.

- (a) Fees and Salaries
- (b) Engineer-Architect Relationship
- (c) Professional Attitude
- (d) Contractor-Engineer Relationship
- (e) Separate Professional Registration

- (f) Collection of Fees
- (g) Contracts with Architects
- (h) Division of Responsibility
- (i) Supervision
- (j) Use of PE seal and Enforcement
- (k) Free Engineering
- (l) Codes and Standards

9. Each person present was asked to expand the above list and send the subjects for discussion to the temporary Secretary to develop a program for the next meeting.



Left to right: Herb Brantley, Albert C. Skon, Fred Dykins, and Al Hill.

NSPE OPPOSES COMMON SITUS PICKETING

Key House and Senate leaders have been advised by NSPE Executive Director Paul H. Robbins that pending Federal labor law amendments relating to "common-situs picketing" could jeopardize the rights of engineering and surveying employees in the construction industry.

Picket Entire Project in Dispute With Subcontractor

Two of the proposed amendments, S. 2643 and H.R. 9070, would legalize picketing on an entire construction project even though a union dispute was with only a single contractor or subcontractor.

Coercion Noted

Robbins called attention to several instances in which building trades unions have engaged in pressure tactics to organize engineering and surveying employees into the union, force their replacement on the job by union members, or coerce construction contractors to cease doing business with the engineering and surveying firms.

Law Would Jeopardize Rights of Engineers

The Society statement cited recent National Labor Relations Board and appellate court rulings to support the view that "existing provisions of the Taft-Hartley Act are adequate in most instances to prevent undue union pressure upon employees of engineering and surveying firms in the construction industry. However, we seriously doubt that existing protection could be maintained should the proposed amendments be enacted into law."

NOTICE TO ALL I.S.P.E. MEMBERS

Listings for our annual Membership Directory Issue of the Illinois Engineer are being compiled for publication.

If you were not listed in the August, 1959, Membership Directory, or if there have been any changes in your listing, please fill out the form below and return it **NO LATER THAN JUNE 30.**

To: ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS
714 Myers Building
Springfield, Illinois

Name: _____ Wife's Name: _____

Grade of membership and year elected: _____

Business Title: _____ Business: _____

Business Address: _____ Business Phone: _____

Residence Address: _____ Residence Phone: _____

Colleges and Universities Attended: _____

Degrees and Years Obtained: _____

Society, organization and club memberships: _____

Registration (type of certificates—States issued): _____

Elective office in ISPE and year held: _____

Chapter affiliation: _____

SHORT COURSE ON WATER WELLS

First of its kind, an unusual engineering short course on evaluating water wells and aquifers was conducted May 10-11 at the University of Illinois, Urbana, by the Engineering Section of the Illinois State Water Survey in cooperation with the University's Engineering Extension Division.

The two-day short course attracted 67 engineers and specialists of five different states, who represented industries, consulting engineering firms, and federal and state agencies. Attendees were from Iowa, Missouri, New York, Tennessee, and Illinois.

As a series of lectures and problem sessions, the short course introduced methods of analysis in ground-water hydrology employed by the Illinois State Water Survey. Subjects covered were analysis and interpretation of pumping test data, including non-steady-state flow, boundary conditions, and sustained yield.

William C. Walton, head of Ground-Water Research, and Harman F. Smith, head of Engineering Section of Illinois State Water Survey, were in charge of the program. Assisting as

(Continued on next page)

Royce E. Johnson Suggests Dynamic Leadership for Engineers in Industry

Why do we not have an active Functional Section for Engineers in Industry? What is wrong? Certainly, this Functional Section could contribute to ISPE and to the entire engineering profession by providing grass roots communication facilities which often are missing among engineers in industry.

The Functional Section for Engineers in Industry will grow, I am confident, if even one dynamic, respected engineer in industry can find time and has the enthusiasm to promote it. This section could gain the support of employers by effectively promoting among their engineers the philosophy that they should continually strive to be better engineers and more useful employees. It could gain support from the employed engineers by developing a program of sufficient interest to them. What is of sufficient interest to drive the functional section idea to fruition?

One suggestion for activating the Functional Section for Engineers in Industry is to find the dynamic, enthusiastic, successful engineer who will lead it. Possibly this will be some engineer who has retired while still in prime condition physically, mentally, and professionally. During or preceding the search for this leader, a committee could study the needs of engineers in industry and ways in which ISPE could assist them. This study would probably involve a questionnaire and might well be on a national scale.

It has been implicitly assumed in this discussion that a desirable and useful service can be performed by a functional section for engineers in industry. This has been my belief for several years and it has been strengthened by statements of others in various contexts. The recent annual TAU Beta Phi lecture to the American Association for the Advancement of Science by Dr. T. Keith Glennan, President-On-Leave from Case Institute of Technology and presently Administrator of the National Aeronautics and Space Administration, contains this thought-provoking statement:

"Strange and revolutionary things are upon us, and more are coming. Old drives are accelerating. New drives are being released. Old patterns of thinking and action are breaking up. New patterns are forming. The future is rushing down

(Continued on next page)



At Head Table during Thursday luncheon are, left to right, Robert Ruthrauff, Frank Edwards, Mayor Lester E. Collins, Monsignor Alphonse Bertman, and Royce Johnson.



Royce E. Johnson

about the author . . .

Royce E. Johnson, P.E., is Manager of Chromatograph Engineering for the Barber-Colman Company in Rockford. An electrical engineer, (U. of Wisconsin BS EE '24 and EE '32), he was a university professor before becoming one of America's leading engineers in industry.

Although he has been busy with a broad range of professional, church and civic activities, he has served ISPE ably and tirelessly. After leading the Rockford Chapter as its president for two years, he was elected vice president of the State Society in 1955 and president in 1956. During his presidency, he devoted much attention to the Fees and Salaries Committee, contributing valuable material on fees for engineers. The publication of the recommended schedules for fees and salaries was a manifestation of his diplomacy and patience.

At the 1958 Annual Meeting, Johnson was elected chairman of the Functional Section for Engineers in Industry. As he wrote the accompanying article, he was commuting between Rockford and Pittsburgh and working with other engineers on research and development of industrial instrumentation.

(Continued from page 10)

group leaders were Water Survey engineers: Sandor Csallany, Robert R. Russell, William H. Walker, Richard J. Schicht, and Robert T. Sasman.

Professor Robert K. Newton of the University of Illinois coordinated the program for the Extension Division.

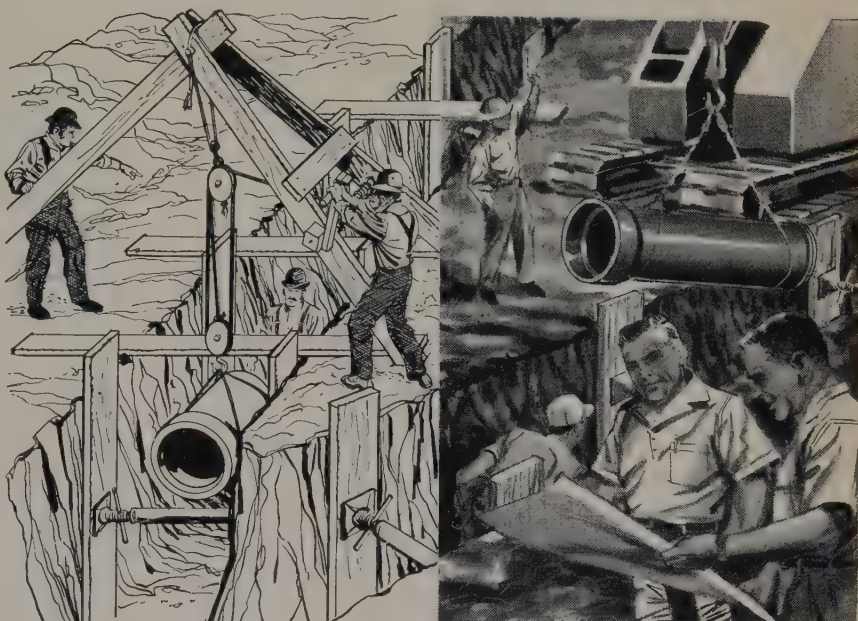
William C. Ackermann, Chief of the Illinois State Water Survey and Professor of Civil Engineering of the University of Illinois, was a featured speaker. Subject of his informal talk was "Pondering and Probing for Ground Water."

(Continued from page 10)

upon us—dismaying and chilling alien, or inspiring and promising more than we would have dared dream a few years ago, depending upon how we approach it."

Engineers in industry will be affected more by these drives and patterns than most other groups of engineers. A Functional Section for Engineers in Industry would render a great service to engineers, industry, and the public if it did nothing more than create among engineers a widespread intelligent awareness of changes in thinking, techniques and philosophy which are taking place at an increasing rate. Just this one activity would make functional sections for engineers in industry worthwhile. Other valuable, even though less intellectual activities will develop once the functional section movement acquires momentum.

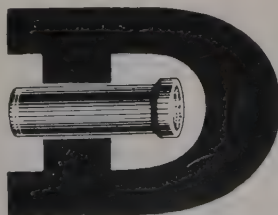
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PROFESSIONAL RECOGNITION

A Report to Management—Engineers For Management

During the postwar years, the attempts of Canadian industry to keep pace with the country's rapid and persistent development have focussed much attention upon the engineering profession. Unfortunately, the spotlight has been on the profession in general rather than on individual engineers; and in many instances this has given rise to a latent feeling of dissatisfaction among professional engineer employees, particularly in the larger industrial and manufacturing companies. This dissatisfaction has often led to a feeling of frustration, which results in the engineer's turning to new, and what appear to him to be greener, fields.

Such shifting of employment, insofar as individual engineers are concerned, is not particularly serious; but from the standpoint of the profession as a whole it constitutes a serious problem. When one contemplates the mass migrations of trained engineers from one plan to another, one realizes that the effect of this restless and continual movement of personnel can cause a serious loss, not only to individual employers, but also to the country's economy. Heavy turnovers in engineering personnel can jeopardize efficient operation.

It has been established that job-switching by engineers is frequently the result of frustration, which, in turn, is usually motivated by lack of professional recognition on the part of the employer. Management, in many cases where job-changing is evident, has not provided a climate in which engineers can work happily and effectively while still retaining their professional attitudes. The provision of an atmosphere to encourage professional growth would go a long way towards dispelling frustration. An engineer with the "feel" of responsibility and pride in his profession is a greater asset to his employer than is a frustrated man.

A climate that will encourage and nurture professional growth among engineering employees will include:

- recognition of professional engineering as creative work.

- breakdown of a job to ensure that an individual is given the feeling of responsibility for a specific part.

- acknowledgment of achievement by the use of the professional seal, or by the signature of the individual on a specific part for which he is responsible.

This is the core around which a programme may be built. It embraces the factors that are encountered in daily job routine. However, there must also be long-term planning to go beyond this core and provide professional recognition in fact.

Such long-term planning would include:

- facilities for group discussions.

- employer-sponsored post-graduate courses for professional engineers who display a particular aptitude—the type of advanced training which would benefit both employer and employee.

- expansion of the effectiveness of non-graduate technicians and assistants by encouraging professional engineers to help educate them.

- the encouragement of membership in professional and technical organizations, and submission of papers to technical publications.

- encouragement of the exchange of ideas through management-engineer conferences.

Proper use of engineering personnel is a two-way street. It can be improved by good communications both ways, between management and engineers. Top management know that professional engineer employees do better work when kept advised of long-term planning and company policy.

Communications should ensure that the ideas of top management reach the individual engineers and that the engineers' ideas reach a top level. Communications, like filing systems, require constant checking.

The use of the "Patent Waiver," all too prevalent in this country, is not an inducement to creative thinking. If such a document is necessary because of the need to protect systems or formulae, then the Company's solicitor should be required to give an equal amount of thought to the protection of employer and to the protection of inventor.

Engineering is not simply a profession in which facts are collected and the answer falls into place; neither is it one in which the solution of a few mathematical formulae is sufficient to produce a new device. It is a profession calling for the utmost in ingenuity, creative ability and sound application so that the best may be made of existing scientific information.

Perhaps the greatest single benefit of an engineering course is the mental training received in it. The professional engineer has been trained in analytical thinking. If he is given an opportunity to use this training to the full, the employer who buys his professional service will benefit, the engineer will benefit, and in the final analysis the nation will benefit.

To the Professional Engineer

There is a credo in the world of salesmanship that a successful salesman is one who believes implicitly in himself, his product, and his vocation. The same reasoning can be applied to a successful professional engineer in industry—he believes in himself, he believes in his calling, he believes in what his profession can do.

An engineer shows his professionalism by (a) a ready acceptance of responsibility, and (b) a professional attitude. To begin with, he is ambitious for

(Continued on page 14)

ASSUMES NEW POST



Larry Goddard

Larry Goddard, who served as Executive Director for ISPE almost two years, has recently taken a similar position as Executive Secretary of the Associated General Contractors of Illinois. In his new position, he will continue to have an interest in cooperative programs with the Engineering Profession. The AGC Chapter is the Heavy and Highway Contractors Association.

In appreciation of Larry's service to ISPE, he was presented with a beautiful Hamilton watch at the 75th Annual Dinner, May 6th. The inscription read, 'LARRY GODDARD, I.S.P.E. 75TH YEAR, 1960.'

Several candidates have been interviewed as a replacement for Goddard. It is hoped that an announcement of the new Executive Director can be made soon.

RODNEY D. CHIPP AND WIFE TOUR SOUTH AMERICA FOR N.S.P.E.

A husband and wife team of engineers followed in the footsteps of President Eisenhower with a month-long tour of five Latin American Countries to explore ways of bettering relationships between North and South American engineers and technicians.

Rodney D. Chipp, director of engineering for Communications Systems, Inc., a wholly-owned affiliate of IT&T, and his wife, Dr. Beatrice A. Hicks, president of Newark Controls Company, Bloomfield, N. J., left March 13 for the tour which took them to five South American countries.

The engineering "ambassadors" made a formal report of their visit at the National Society's annual meeting in Boston, June 8-11.

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(Continued from page 12)

himself; but the "drive" in him for his own welfare becomes channelled into a deep interest in the progress of his company and his profession. This broadened interest in its turn, resolves itself into an approach to problems from a broader point of view than that of mere personal self-interest. The logical and ultimate result is a fusion of ambition with professional pride, in his association with the management team.

There has been much comment lately concerning "engineer frustration." The factors involved seem to point to a lack of acceptance of responsibility on the part of the engineer, plus a lack of effective communications on the part of industry for providing a broad management picture to its professional engineers.

It is probable that much of this frustration is caused by the engineer's hesitation to accept an adequate amount of responsibility while seeking the recognition he believes he deserves. No one in any profession is entitled to recognition unless he is willing to assume responsibility proportionate to his job.

Since we are concerned here with the professional engineer, let us examine the line of responsibility which should be inherent in the profession. As in other professions, reason and the law prescribe certain standards for the engineering profession to live up to. The law operates for example to ensure that engineering work shall be carried out by registered professional engineers for the protection of the public and the safeguarding of life, health and property. This legal requirement involves the laying down of a rigorous code of ethics for these professional engineers. Such a code of ethics is a criterion of the responsibility and consequent dignity of the engineering profession. In order to "sell" himself to management, the engineer has a very clear responsibility.

The fact that so many engineers advance into management positions can be attributed to their "over-all" type of thinking. They are the engineers who have successfully proved ability to accept many and diversified responsibilities.

An engineer, as an individual, is responsible for the success of his own career. The key to his success is the manner in which he sells himself to management. Paraphrasing the adage: "See yourself as others see you," an engineer might ask himself: "How does my employer rate me as an engineer?"

There are certain guide posts along the road to professional recognition. An engineer should get to know his company and to know the economic facts of industrial life. He should get to know about such items as opportunities for advancement, opportunities for expansion, new products, and technical trends in industry. When he has acquired a knowledge of such matters as these, he has, in effect, begun fulfilling his

responsibility to himself as an engineer, to management as a professional employee, and to his profession.

Earlier, we mentioned acceptance of responsibility. Each person creates his own level of acceptance. As Archimedes demonstrated with water, levels are affected by weight displacement. This principle of physics is generally true in industry also—the higher levels of acceptance are attained by the carrying of heavier responsibilities.

Canadian engineers have a wonderfully fertile ground in which to create and build. Their professional development has a close kinship with their sense of the challenge and creative appeal which this country affords in such large measure through its vast natural resources and unlimited outlets for expansion.

The rate of an engineer's professional development is directly linked with his professional recognition in the eyes of management. Without development in himself he cannot obtain recognition by others. And to attain both, the engineer must first ask himself "Am I aware of my responsibility to myself and my employer?" And then he must implement his awareness in action.

Professional development has many contributing factors. It is to be derived from one's Engineering Associations and from his contacts with other engineers. It is to be found in his appreciation of the humanities and his recognition of the other fellow's achievements. It lies along the lines of an engineer's communication with management regarding suggestions for product design improvement and time saving innovations. It is linked with his awareness of ethical conduct, and of the importance of personal appearance and deportment. It is also to be achieved through his desire to keep abreast of engineering developments and new technique.

To extend the analogy of the salesman to its conclusion, the engineer by his identity as part of the management team, must feel that he represents management in his thinking and in his actions. By his attitude he must strike a wholesome note between members of management and people in subordinate capacities, and let the tone of that note speak for him regarding his identification. A salesman is the representative of the company whose products he sells; an engineer is a representative of his company's management group, regardless of his status in the company's operations.

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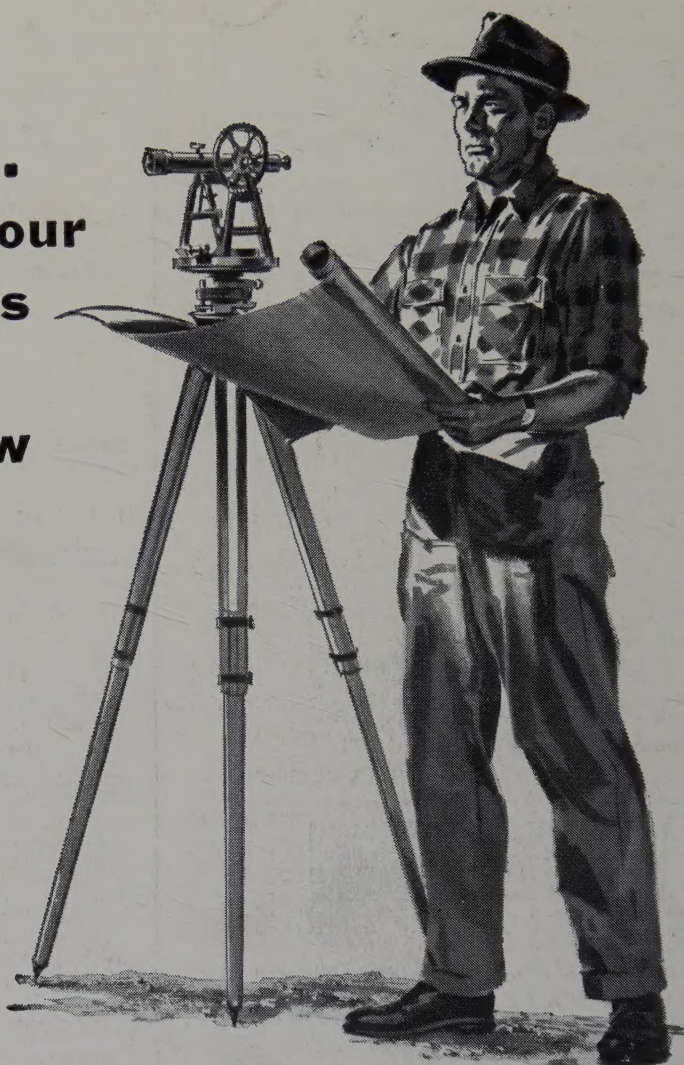
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